

Modification No. 001

To

**MEMORANDUM OF AGREEMENT**  
**between the**  
**DEPARTMENT OF TRANSPORTATION**  
**FEDERAL AVIATION ADMINISTRATION**  
**and the**  
**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**  
**concerning**  
**JOINT UNIVERSITY RESEARCH**  
**IN AIR TRANSPORTATION**

I. Purpose

The purpose of this modification to the MOA FNA/05-97-02 is to:

- a. Extend the period of performance to September 30, 2007;
- b. Assign different individuals as Technical Representatives to this Agreement due to workforce changes within either both agencies; and
- c. Update and add additional terms and conditions to the Agreement.

II. Refer to Section 2, "Background." Replace with the following paragraph:

Numerous research activities of mutual benefit to the Federal Aviation Administration (FAA) and the National Aeronautics and Space Administration (NASA) have been accomplished through the coordination of joint research and development efforts at academic institutions. The purpose of this agreement is to facilitate long-term joint research and development in aviation related technologies at universities between the signatory agencies. The initiation of new, as well as the continuation of existing university programs, is envisioned under this agreement. An example of the latter is the FAA/NASA Joint University Program for Air Transportation Research. Now in existence over 30 years, this program has been one of the principal vehicles for long-term, cross disciplinary civil aviation systems research in FAA and NASA. The participating institutions have pursued a diversity of research topics under these programs. Noteworthy examples include the investigation of navigational aids, satellite applications and avionics at Ohio University; flight control theory at Princeton University; and systems aspects of air traffic control, as well as aircraft icing at Massachusetts Institute of Technology (MIT). NASA Ames has conducted similar research programs with West Coast universities, most notably Stanford, UCLA, and UC Berkeley, in diverse enabling technologies of relevance to civil aviation.

III. Refer to Section 5.A.1, "Research Areas." Add the following paragraph:

g) Aviation Security

This area includes research into new paradigms for decision-making and assessment of air transport security operations. Operation research, simulation, statistical analysis, and even investigations into the biological sciences will be utilized to explore alternatives for increasing the security of the aviation industry.

IV. Refer to Section 5.A.2, "NASA and FAA Responsibilities." Replace with the following:

In view of the highly cooperative nature of the research tasks and their means of performance under this agreement, NASA Ames and the FAA Office of Aviation Research will consult with each other on a regular and continuous basis in regard to research efforts of mutual interest.

Grant awards to existing participating universities, as well as selection of awards to additional universities, for participation in the research and reporting tasks under this MOA, shall be made subject to the respective grant selection and award authorities of FAA and NASA. Solicitation, evaluation, selection, and award of grants for this purpose may be made jointly or singly by the respective agencies after mutual consultation.

The FAA and NASA shall attend quarterly reviews at the participating universities to provide technical direction and program management of the research. The NASA Ames Research Center and the FAA Office of Aviation Research shall arrange, provide facilities for, and attend the winter quarterly review meeting in alternating years. At these meetings, selected students may receive formal recognition as FAA/NASA Fellows, consistent with the directives and policy established for designating fellows in both agencies.

The FAA and NASA shall singly or jointly establish and maintain an Internet web site with information on all research conducted under this program, based upon information provided from the performing institutions. The URL will be provided to program participants, government agencies, academic institutions and appropriate companies in the aviation industry.

IV. Refer to Section 5.C, "Schedule." Replace with the following paragraphs:

Four quarterly technical reviews will be held: A winter review will be held alternating each year between FAA and NASA Centers. Spring, summer, and fall reviews will be conducted at the participating universities on a rotating basis. Following each quarterly review meeting, the established Internet web site, as stated in paragraph A.2, will be updated with the current information as provided by the performing institutions. Participating universities shall submit research proposals to FAA and/or NASA no later than the two months prior to their expiration, and award via contract, grant or other agreement shall occur prior to their expiration each year.

An annual program review shall be conducted by FAA or NASA prior to award via contract, grant or other agreement, as established practice under these vehicles.

V. Refer to Section 5.D, "REPORTS." Replace with the following:

FAA and NASA will be provided a copy of the technical presentations from each quarterly review. It is the responsibility of the institution hosting the review to provide and disseminate these materials. FAA and NASA will establish and maintain an Internet web site with information on all research conducted under this program, based upon information provided from the performing institutions.

VI. Refer to Section 5.F, "FUNDING." Replace with the following:

The funding profiles shown below reflect incremental funding through program completion and take all planned resources into consideration. Funding will be used for sponsorship of university research via one of a number of legal instruments, e.g. contract, grant, cooperative agreement, or other agreement, as well as for research and administrative expenses incurred by the FAA and NASA in execution of the program. The funding shown is for planning purposes only, and does not constitute authority to commit, obligate, or expend funds except as authorized by FAA and NASA officers authorized to enter into contracts, grants or other agreements on behalf of their respective agencies.

(\$ in thousands)\*

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
FAA	221	221	221	221	221
NASA	221	221	221	221	221
Total	442	442	442	442	442

This MOA will not be used by itself as a funding document for the purpose of recording NASA and/or FAA transfer of funds. The transfer of funds documentation will, however, refer to this MOA as the basis for the transfer.

- Additional funding may be added from other FAA and NASA programs

VII. Refer to Section 5.G, "TECHNICAL REPRESENTATIVE (TR)." Replace with the following:

The following individuals are responsible for the oversight of this MOA at their respective centers; however, they do not have the authority to unilaterally alter any of the terms of this MOA. Any requests for changes shall be made in accordance with Paragraph 7, Amendments and Revocations. The Office of Record for this MOA is the FAA/NASA R&D Field Office at NASA Langley Research Center, Hampton, Virginia, AAR-210, (757/864-1905)

1. Mike Paglione, FAA Technical Center, ACB-330, (609) 485-7926
2. Leonard Tobias, NASA Ames Research Center, AFA, (650) 604-5430

VIII. Except as provided herein, all terms and conditions of this MOA remain unchanged and in full force and effect.

**APPROVALS:**

Department of Transportation  
Federal Aviation Administration



Dr. Herman A. Rediess  
Director, Aviation Research

Date: 6-27-02

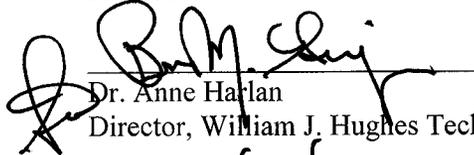
National Aeronautics and Space  
Administration



Dr. Henry McDonald  
Director, Ames Research Center

Date: 7/25/02

Department of Transportation  
Federal Aviation Administration



Dr. Anne Harlan  
Director, William J. Hughes Technical Center

Date: 6/24/02